

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 2

could not
B1
can
projects light having a dominant wavelength less than about 635 nm, and wherein the light projected from said first light source exhibits color coordinates different from the light projected from said second light source.

See 107
B2
11. (Amended) A light emitting assembly comprising a first solid state light source and a second light source, said light sources oriented such that when said first and second light sources emit light, light projected from said first and second light sources overlaps and is capable of forming effective white light, wherein said first light source projects light having a blue hue, and wherein said second light source projects light having a hue other than blue, wherein said first light source includes an LED junction.

12. (Amended) The light emitting assembly of claim 11, wherein said second light emitting source is a phosphorescent or fluorescent dye or pigment.

13. (Amended) The light emitting assembly of claim 12, wherein said phosphorescent or fluorescent dye or pigment being disposed so as to be irradiated with light from said first light source.

14. (Amended) The light emitting assembly of claim 12 and further comprising an optical element spaced apart from said first light source, said phosphorescent or fluorescent dye or pigment being disposed on or within said optical element.

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 3

could be 62
15. (Amended) The light emitting assembly of claim 11 and further including a leadframe and an encapsulant, where said first light source is mounted on said leadframe and encapsulated by said encapsulant.

B2
cont
16. (Amended) The light emitting assembly of claim 15 wherein said leadframe includes a heat extraction member and a plurality of electrical leads, said heat extraction member providing a thermal path from said first light source having a lower thermal resistance than a thermal path provided by said electrical leads.

17. (Amended) The light emitting assembly of claim 16, where said second light source is a semiconductor optical radiation emitter and is mounted on said leadframe and encapsulated by said encapsulant.

18. (Amended) The light emitting assembly of claim 16, where said second light source is a fluorescent dye or phosphor.

B3
25. (Amended) A white light emitting device comprising:

a source of radiation having a peak wavelength equal to or less than about 550 nm; and
an optical element mounted in spaced relation from said radiation source to receive the radiation emitted from said radiation source,

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 4

B3
C
where said optical element includes a fluorescent dye or phosphor that is responsive to the radiation received from said radiation source to generate and emit light,
where the light emitted from said device is substantially white light.

44. (Amended) A light emitting assembly comprising:

a first light source emitting light having a dominant wavelength less than about 530 nm; and

a photoluminescent second light source excited by a semiconductor radiation source that emits radiation when a DC potential is applied thereto,

B4
wherein said first and second light sources are oriented such that when said first and second light sources emit light, light projected from said first and second light sources overlaps and is capable of forming effective white light, wherein the light projected from said first light source exhibits color coordinates different from the light projected from said second light source.

B5
51. (Amended) The light emitting assembly of claim 44 and further including an encapsulant disposed over said first light source, said photoluminescent second light source disposed on or within said encapsulant.

B6
69. (Amended) A light emitting assembly comprising:

a first light source including an OLED; and

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 5

a second light source,

wherein said first and second light sources are oriented such that when said first and second light sources emit light, light projected from said first and second light sources overlaps and is capable of forming effective white light, wherein the light projected from said first light source exhibits color coordinates different from the light projected from said second light source.

70. (Amended) The light emitting assembly of claim 69, wherein said second light source includes a OLED.

72. (Amended) A light emitting device comprising first, second, and third light emitting sources oriented such that when said first, second, and third light sources are energized, light emitted from said first, second, and third light sources overlaps and is capable of forming effective white light, wherein the light emitted from said first light source exhibits color coordinates different from the light emitted from said second and third light sources, the light emitted from said second light source exhibits color coordinates different from the light emitted from said third light source, and wherein at least one of said light emitting sources is a photoluminescent source, wherein at least one of said light emitting sources is an electroluminescent device.

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 6

99. (Amended) A discrete light emitting diode component comprising:

a leadframe;

a polymer matrix enclosure;

an LED chip emitting light having a first hue, said LED chip is disposed on said leadframe and enclosed within said enclosure; and

B8 a narrow band light emitter emitting light of a hue different than emissions from said LED chip, said LED chip and said narrow band emitter are disposed such that, when said LED chip and said narrow band emitter emit light, emissions from said LED chip overlap and mix with emissions from said narrow band emitter to form metameric white light.

Sub. (37)
B9 104. (New) The light emitting assembly according to claim 1 and further comprising an optical element spaced apart from said first light source, wherein said second light source is a phosphorescent or fluorescent dye or pigment disposed on or within said optical element, said phosphorescent or fluorescent dye or pigment emitting light having a second hue when irradiated with light from said first light source, wherein said first and second hues are binary complements of one another such that effective white light is projected from said optical element.

105. (New) The light emitting assembly according to claim 1, wherein said first light source is an LEP.

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 7

*Contd
in CO*
106. (New) The light emitting assembly according to claim 1, wherein said first light source is an OLED.

107. (New) The light emitting assembly according to claim 1, wherein said first light source projects illumination in response to voltages less than about 13 volts.

108. (New) The light emitting assembly according to claim 1, wherein one of said first and second light sources is made in part of a material selected from the group consisting of AlInGaP and AlGaAs.

*B 9
Contd*
109. (New) The light emitting assembly according to claim 1, wherein one of said first and second light sources is made in part of a material selected from the group consisting of GaN and InGaN.

110. (New) The light emitting assembly according to claim 1, wherein neither of said first and second light sources projects light having a yellow hue.

111. (New) The light emitting assembly according to claim 1, wherein the light emitting assembly is a discrete light emitting diode component comprising:

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 8

could be
a leadframe; and

a polymer matrix enclosure,

wherein the first light source is an LED chip disposed on said leadframe and enclosed within said enclosure, and

wherein said second light source is a narrow band light emitter, said LED chip and said narrow band emitter are disposed such that, when said LED chip and said narrow band emitter emit light, emissions from said LED chip overlap and mix with emissions from said narrow band emitter to form metamerically white light.

B 9
cont
112. (New) The light emitting assembly according to claim 1 and further comprising a photoluminescent light source, wherein said first light source is a first electroluminescent light source, and said second light source is a second electroluminescent light source, wherein said first and second electroluminescent light sources are oriented such that light emitted from said first and second electroluminescent light sources overlaps and is capable of forming effective white light, wherein the light emitted from said first electroluminescent light source exhibits color coordinates different from the light emitted from said second electroluminescent light source, and wherein said photoluminescent light source is oriented such that light projected from said photoluminescent light source overlaps with that emitted from said first and second electroluminescent light sources.

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 9

*Cont'd
for C3*
113. (New) The light emitting assembly of claim 11, wherein said LED emits blue light when a DC potential is applied thereto.

114. (New) The white light emitting device of claim 25 and further comprising:

a leadframe including a plurality of electrical leads and a heat extraction member, wherein said source of radiation is mounted on said leadframe and electrically coupled to at least two of said electrical leads; and

an encapsulant covering said source of radiation and portions of said electrical leads and said heat extraction member,

*B 9
Con*
wherein said heat extraction member provides a thermal path from said semiconductor optical radiation emitter having a lower thermal resistance than a thermal path provided by said electrical leads.

115. (New) The light emitting assembly of claim 44 and further comprising:

a leadframe including a plurality of electrical leads and a heat extraction member, wherein said first light source is mounted on said leadframe and electrically coupled to at least two of said electrical leads; and

an encapsulant covering said first light source and portions of said electrical leads and said heat extraction member,

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 10

wherein said heat extraction member provides a thermal path from said semiconductor optical radiation emitter having a lower thermal resistance than a thermal path provided by said electrical leads.

116. (New) The light emitting assembly of claim 44 and further comprising an optical element spaced apart from said first light source, wherein said photoluminescent second light source is a phosphorescent or fluorescent dye or pigment disposed on or within said optical element, said phosphorescent or fluorescent dye or pigment emitting light having a second hue when irradiated with light from said first light source, wherein said first and second hues are binary complements of one another such that effective white light is projected from said optical element.

117. (New) The light emitting assembly according to claim 44, wherein the light emitting assembly is a discrete light emitting diode component comprising:

a leadframe; and

a polymer matrix enclosure,

wherein the first light source is an LED chip disposed on said leadframe and enclosed within said enclosure, and

wherein said photoluminescent second light source is a narrow band light emitter carried on said leadframe, said LED chip and said narrow band emitter disposed such that,

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 11

when said LED chip and said narrow band emitter emit light, emissions from said LED chip overlap and mix with emissions from said narrow band emitter to form metamerically white light.

89
118. (New) The light emitting assembly of claim 44, wherein said first light source includes a LED chip and said photoluminescent second light source is disposed on a surface of said LED chip.
